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MINNESOTA DEPARTMENT OF PUBLIC SERVICE

Biennial Report
1983-1984

Introduction

FORWARD

The Minnesota Department of Public Service is a state regulatory agency with investigative and enforcement responsibilities relating to gas, electric and telephone utilities and weights and measures in Minnesota.

This Biennial Report is designed as a one-stop resource for often requested statistical data and information relating to public utilities, the regulatory process, and rate case history. The report also covers the varied responsibilities of the Department's Weights and Measures Division.

Statistical data, the most current available at time of publication, is keyed primarily to utility operations in Minnesota. The Department's Research and Information Center is a further source of information and statistical data relating to public utilities and public utility regulation.

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MDPS

Minnesota Department of Public Service

Public Advocate for the State of Minnesota in Regulation of Public Utilities

Investigative and Enforcement Agency for Weights and Measures

Biennial Report
MDPS Publication
Editor: Bob Carlson

An Introduction to the Department

MINNESOTA DEPARTMENT OF PUBLIC SERVICE

DIRECTOR
Ray Bohn

DEPUTY DIRECTOR
Ken Peterson

ADMINISTRATIVE ASSISTANT
Elizabeth Woodhouse

PERSONNEL DIRECTOR
William Janisch

UTILITY PROGRAM MANAGER
Ken Nickolai

TELECOMMUNICATIONS UNIT
Michael Boyd

COMPUTATIONAL UNIT
Luther Thompson

ENERGY UNIT
Barry Payne

ENERGY ISSUES INTERVENTION OFFICE
Marice Rosenberg

RESEARCH/INFORMATION CENTER
Bob Carlson

WEIGHTS & MEASURES DIVISION
Ed Skluzecek, Director

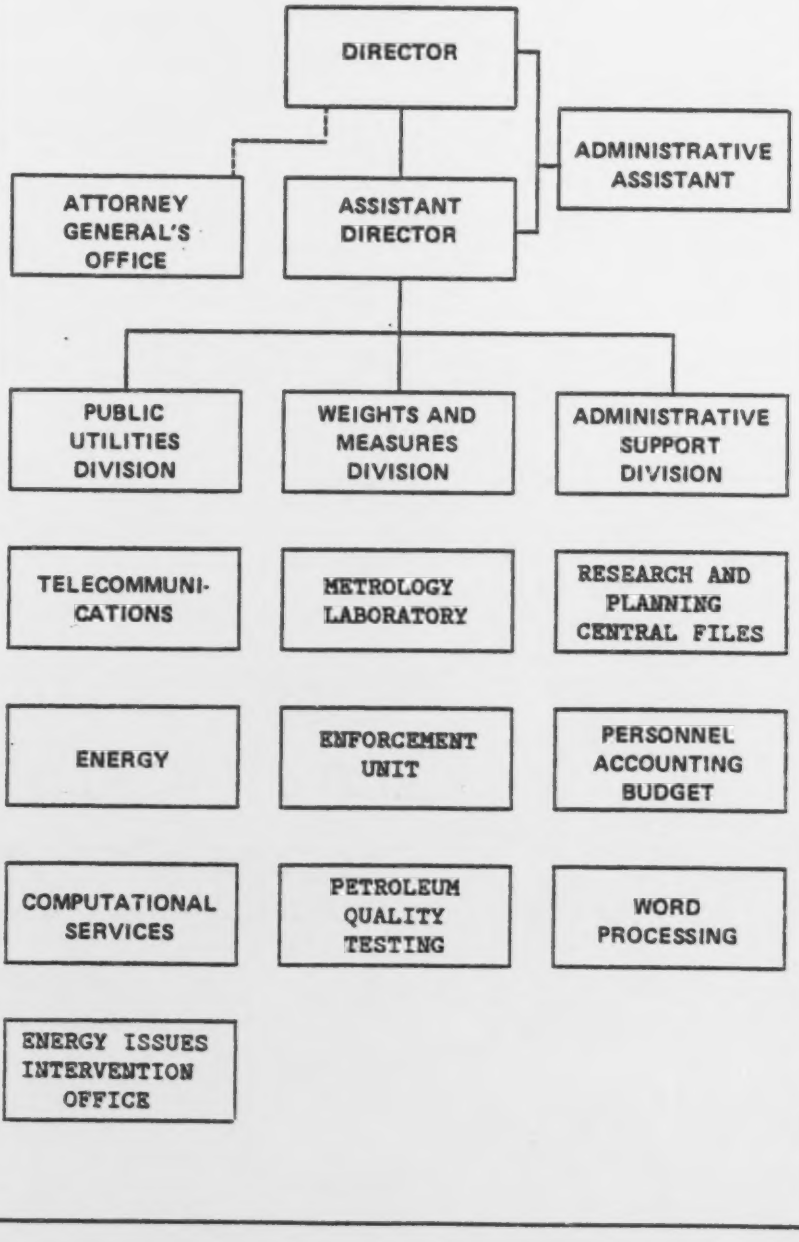
OFFICES

790 American Center Building
160 East Kellogg Boulevard
Kellogg at Robert Street
St. Paul, Minnesota 55101
(612) 296-7107

Weights & Measures Division
2277 Highway 36
Roseville, Minnesota 55113
(612) 341-7200

TABLE OF ORGANIZATION

STATE OF MINNESOTA
DEPARTMENT OF PUBLIC SERVICE



An Introduction to the Department

Minnesota Statutes and Rules Relating to the Regulation of Public Utility Rates, Service

Weights and Measures regulation and regulation of gas, electric and telephone utilities providing service in Minnesota is carried out in accordance with laws enacted by the Minnesota Legislature and rules adopted by the Minnesota Public Utilities Commission, the Department of Public Service and the Office of Administrative Hearings.

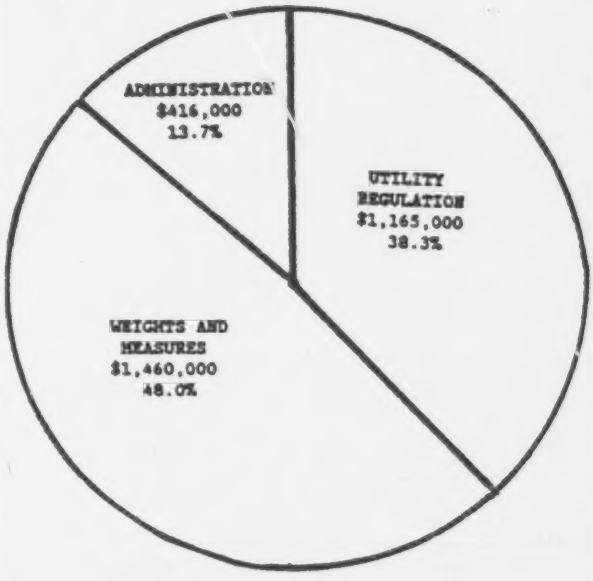
- STATUTES -
Department of Public Service
Chapter 216A
Regulation of gas/electric utilities
Chapter 216B
Regulation of telephone utilities
Chapter 237
Weights and Measures
Chapter 239

- RULES -
Weights and Measures
Chapter 7600 (7600.0100-7600.9600)
Telephone Utilities
Chapter 7810 (7810.0100-7810.8000)
Gas and Electric Utilities
Customer Service Rules
Chapter 7820 (7820.0200-7820.4900)
Regulatory Requirements
Chapter 7825 (7825.0200-7825.5700)
Rule Hearings
Contested Case Procedures
9MCAR § 2.101-2.222

Copies of rules and statutes are available for review in the Department of Public Service Research/Information Center and may be purchased from the State Register and Public Documents Division, 117 University Avenue, St. Paul, 55155.

*Evidentiary and public hearings on utility rate matters are conducted under rules of the Office of Administrative Hearings.

Department of Public Service Operating Budget



DEPARTMENT OF PUBLIC SERVICE
OPERATING COSTS BY PROGRAM

	Fiscal Year 1983	Fiscal Year 1984
Utility Regulation		
General Fund	$1,091,000	$1,287,000
Revolving Fund	74,000	93,000
Weights & Measures		
General Fund	$1,460,000	$1,594,000
Administration		
General Fund	$ 416,000	$ 452,000
TOTAL	$3,041,000	$3,426,000

An Introduction to the Department

MDPS Role Covers Utilities, Weights, Measures

The Minnesota Department of Public Service is a regulatory agency with statutory responsibilities relating to telephone, gas and electric utilities and weights and measures in Minnesota. The Department serves as public advocate for the state of Minnesota in the regulation of public utilities and is also the investigative and enforcement agency for public utility and weights and measures statutes.

Utility regulatory responsibilities include investigation of utility revenue and rate matters, monitoring of rate adjustment clauses, investigation of utility acquisitions and review of proposed issuance of securities by regulated utilities. The Department undertakes special investigations and studies relating to utility rates, service and public issues. In contested cases, the Department identifies issues and presents various alternatives on financial, rate and service matters. The Department's recommendations, presented through sworn testimony, reflect positions which, in its opinion, are in the best interest of the broad general public.

The Department's Weights and Measures division has statutory responsibility to examine and evaluate all weighing and measuring devices in commercial service in the state to protect Minnesota citizens from false weighing or measuring transactions. The division was established in 1911 as successor to the State Scale Department, one of the oldest agencies in state government, established in 1895. The Weights and Measures division is responsible for the accuracy verification of weight, measure and weighing or measuring devices used in the state. The responsibility also extends to ensuring accurate weight, measure or count in all commercial transactions.

The Department staff includes experts in weights, measures, statistics, econometrics, economics, accounting, engineering and related utility and regulatory fields. The Department is an arm of the executive branch of Minnesota government and the Department director is appointed by the Governor. As administrative head, the Director enforces orders and directives of the Public Utilities Commission and developes the Department's administrative policies and procedures. Department functions are separated into a utilities unit, a weights and measures division and an administrative support section.

REGULATORY HISTORY

State governments exercised rate regulation over public utilities long before Federal regulation. State regulatory commissions were first established with the New York State Public Service Commission in 1907. Minnesota regulated telephone rates starting in 1915, but did not exercise state regulation over gas and electric rates until January 1, 1975. Prior to that date, gas and electric utilities providing retail service in Minnesota were regulated by each municipality granting them a franchise.

Rates charged for power sold across state lines were not regulated until Congress passed the Federal Power Act of 1935, a jurisdictional arrangement that remains in effect today. The Federal Energy Regulatory Commission (FERC) is the successor to the Federal Power Commission (FPC), which regulates rates charged for wholesale gas and electricity. Individual state regulatory commissions exercise utility rate jurisdiction for retail sales within state boundaries.

An Introduction to the Department

ENERGY ISSUES INTERVENTION OFFICE

A new addition to the regulatory activities of the Department of Public Service is the Energy Issues Intervention Office (EIIO). It was established by the legislature in 1983 to provide Minnesotans a stronger voice in Washington on federal energy policy.

The EIIO has given first priority to natural gas issues before the Congress and the Federal Energy Regulatory Commission (FERC). Much of Congressional activity focused on various measures to come before the Congress on the issue of regulation of the price of both "old" and "new" natural gas. The EIIO also recommended numerous policy changes of its own including rotation of the FERC Commissioners so that all sections of the country would be represented, gas consuming states as well as gas producing states. EIIO also proposed regional hearings to permit more effective input from gas consuming states in the setting of gas prices and establishing wholesale rates.

In the first year and a half of operation the EIIO participated in and expressed Minnesota ratepayers' concerns on more than 34 different utility rate and policy matters before the Federal Energy Regulatory Commission. Some of the issue areas that it was involved in were: the purchasing practices of Minnesota's largest wholesale supplier of natural gas; construction costs for off-shore exploration; interstate utility coordinating agreements; pipeline transmission costs; and working capital and rulemaking issues.

EIIO also participated in non-natural gas issues before FERC and other federal agencies such as fuel assistance, nuclear power, oil company over-charges, hydropower licensing, and coal shipment cost.

By coupling its utility investigative responsibilities and the federal representation activities the Department provides first rate representation of Minnesota's interests in federal energy issues.

Research/ Information Unit Maintains Regulatory Files

The MDPS Research and Information Section maintains records and case files on matters under jurisdiction of the Department and the Public Utilities Commission. Copies of regulatory orders, utility rates, service area matters and quality of service reports are on file and available for public review. Work space is available to review copies of orders, testimony, transcripts and exhibits. Service area maps for telephone and electric utilities are available for review. Utility financial reports and tariff books are on file.

Because of the great demand for regulatory orders and documents, the Department is required to assess a charge for copies of official materials. Certified copies are priced at $2 for each document plus a flat charge of 25¢ per page for duplication. Other duplicates are priced on a variable scale set by the Documents Section based on the size, number of pages and difficulty of preparation. Requests for duplicates and/or certified copies of regulatory documents should be made through the Research and Information Section, Department of Public Service, American Center Building, St. Paul, (612) 296-7107. Copies of utility service area maps are also available, on order.

Attorney General

The Attorney General of the State of Minnesota provides legal counsel to all state agencies involved in utility rate and service matters. The Office of the Attorney General also represents residential ratepayers of regulated utilities on issues of special concern to residential customers.

An Introduction to the Department

Regulatory History

March 1871	Railroad Commission established.
January 1895	State Scale Department created; Railroad and Warehouse Commission created.
May 1911	Weights and Measures regulation established.
January 1915	Minnesota's telephone companies placed under state regulation.
January 1919	Study reveals 2,058 telephone companies operating in Minnesota.
January 1920	Minnesota is first state to establish telephone accounting separations manual as part of regulatory requirement.
July 1921	Uniform system of accounts required for each telephone company.
January 1960	Survey shows a total of 1,076 telephone companies operating in Minnesota.
January 1968	Railroad and Warehouse Commission renamed Public Service Commission; Department of Public Service established as umbrella agency to provide administrative and enforcement sources to Commission.
January 1975	State regulatory authority over gas and electric utilities became effective; Public Service Commission expanded to five members.
April 1978	Electric cooperatives exempted from state rate regulation.
January 1979	Telephone cooperatives exempted from state rate regulation.
July 1980	Administrative separation of Department of Public Service and Public Utilities Commission, establishing two separate state agencies.
May 1981	Gas distribution utilities serving fewer than 650 customers exempted from state rate regulation.
May 1981	Telephone companies serving fewer than 2,500 subscribers exempted from state rate regulation.
May 1982	Minnesota Statutes 216B and 237 amended to eliminate rates under bond; interim rate procedure established; 10-month time limit set on final rate case decision.
May 1983	Cooperative Electric Association Stockholders Rights Act adopted.
January 1984	Separation of AT&T and Bell operating companies; customer telephone equipment deregulated.
April 1984	Telephone companies serving fewer than 15,000 subscribers exempted from state rate regulation.
August 1984	Radio Common Carriers exempted from state rate regulation under Minnesota Statutes §237.

An Introduction to the Department

MDPS Directs Voting In Re-regulation of Co-ops

Minnesota's electric cooperatives were exempted from state rate regulation in 1978. However, the legislature provided a balloting procedure for members of electric cooperatives to vote as to whether rates and services should be regulated by the Public Utilities Commission. Signatures of 5% of the members of a cooperative is a required first-step to balloting the total membership on the regulation issue, and an affirmative majority of those voting is necessary to bring the cooperative under state rate regulation.

Since 1980, the Department of Public Service has conducted five elections among electric cooperatives on the issue of rate regulation. Results of those elections are shown on the table below:

Name of Cooperative	Ballots Mailed	Ballots Returned	Yes Votes	No Votes	Spoiled Ballots
Dakota Electric Association Farmington, Minnesota	28,856	14,545	8,620	5,913	12
Northern Electric Virginia, Minnesota	12,986	7,146	3,246	3,896	4
Frost-Benco Electric Mankato, Minnesota	7,075	4,088	2,751	1,327	10
Carlton Co-op. Power Kettle River, Minnesota	8,626	5,067	2,515	2,537	15
North Pine Electric Finlayson, Minnesota	6,918	4,416	1,615	2,793	8

Minnesota Statutes provide procedures for members of electric cooperatives to petition for (1) regulation of rates by the Minnesota Public Utilities Commission (MS 216B.026) and (2) compliance of a cooperative's board of directors with the Cooperative Electric Association Stockholders Rights Act (MS 216B.027).

The Department of Public Service provides sample petition forms to members of electric cooperatives desiring to initiate a petition for rate regulation or compliance with the cooperative stockholder rights act. The Department also processes completed petitions and conducts the balloting of members of a cooperative after verification/acceptance of a petition.

Sample petition forms and instructions for initiating a petition are available without charge from the Information Center, Department of Public Service, 790 American Center Building, St. Paul, Minnesota 55101, (612) 296-7100. Electric cooperatives serving Minnesota are also required to provide sample petition forms to members on request.

301 Public Utilities Serve Minnesota

Minnesota citizens are provided gas, electric and local telephone utility services through 301 public, cooperative and investor-owned utility companies.

Electric service is provided to 1,746,307 customers by 48 electric distribution cooperatives, 125 municipal electric utilities and six investor-owned electric utilities. The 179 electric utilities have a Minnesota plant investment of more than $4.6 billion dollars and collected nearly $2 billion in revenues from Minnesota customers in 1983.

Natural gas is provided by 18 municipal gas utilities and 10 investor-owned gas companies. The 10 investor-owned gas utilities have a plant investment in excess of $667 million. Data on municipal investment for providing natural gas is not available. Minnesota's 28 gas utilities, including municipals, collected revenues of nearly $1.2 billion in 1983.

Telephone service in Minnesota is provided by 23 regulated telephone utilities, 22 non-regulated cooperative and municipal companies, and 49 non-regulated companies serving fewer than 2,500 customers. The 94 telephone companies served nearly 1.7 million customers and collected more than $1.2 billion in revenues in 1983. The 94 telephone companies have a Minnesota plant investment exceeding $3 billion.

The 301 gas, electric and telephone utilities operating in Minnesota have a total plant investment of nearly $8.5 billion to serve 4.6 million customers who paid more than $4.6 billion for their utility services in 1983.

Minnesota's Gas and Electric Utilities Act (M.S. 216B) does not apply to municipal utilities and applies only to electric cooperatives whose members choose to become regulated. Gas utilities serving fewer than 650 customers are also exempted from state rate regulation. Minnesota's Telephone Regulatory Act (M.S. 237) does not apply to telephone cooperatives and/or telephone companies serving fewer than 15,000 customers.

Minnesota telephone utilities have been regulated since 1915. On January 1, 1975, Minnesota became the 48th state to undertake state regulation of gas and electric utilities.

Regulatory Authority/Procedures

Authority for regulation of public utilities in Minnesota is detailed in Chapter 15, the Administrative Procedures Act and in Minnesota Statutes, Chapters 216A, 216B and 237, which govern the Department of Public Service and the Public Utilities Commission. Rules for telephone utilities are included in Administrative Rules Chapters 7810-7815. Rules pertaining to gas and electric utilities are included in Rules Chapters 7820-7835. Copies of rules are available from the Public Documents Division, 117 University Avenue, St. Paul, Minnesota 55155.

Timetable

The rate case process for regulated public utilities is complicated and time consuming. It takes 10 months to complete, entails more than 90 distinct steps involving several state agencies and various consumer and user groups. Most steps in a rate case are required to assure that every party has opportunity to present the best evidence it can. More than half of the allowed period is devoted to the investigative process. The Department of Public Service is the major intervening party in all rate matters. It has primary responsibility to see that the record is complete regarding proposals made by the utility and other intervenors.

Minnesota's Public Utilities

MINNESOTA'S PUBLIC UTILITIES[1]

Natural Gas • Electric • Telephone

MINNESOTA ELECTRIC UTILITIES	Number of Customers	Minnesota Operating Revenues	Utility Plant-In-Service
48 Electric Cooperative Utilities [2]	426,037	$ 411,616,072	$ 669,133,135
125 Municipal Electric Utilities [3]	261,994	241,592,999	N/A
6 Investor-Owned Electric Utilities	1,058,276	1,461,315,000	3,910,620,000
TOTAL - 179 Utilities	1,746,307	$2,114,524,071	$4,609,753,135
MINNESOTA GAS UTILITIES			
18 Municipal Gas Utilities [3]	53,750	67,175,284	$ N/A
10 Investor-Owned Gas Utilities [4]	825,715	1,193,257,000	667,383,000
TOTAL - 28 Utilities	879,465	$1,260,432,284	$ 667,383,000
MINNESOTA TELEPHONE UTILITIES			
23 Regulated Telephone Companies	1,569,389	$1,175,723,897	$3,034,807,176
22 Cooperative/Municipal Companies	55,264	22,875,968	97,517,842
49 Companies(less than 2500 customers)	48,118	19,937,439	70,265,312
TOTAL - 94 Companies	1,672,771	$1,218,537,304	$3,202,590,330
SUMMARY - 301 PUBLIC UTILITIES			
179 Electric Utilities	1,746,307	$2,114,524,071	$4,609,753,135
28 Natural Gas Utilities	879,465	1,260,432,284	667,383,000
94 Telephone Utilities	1,672,771	1,218,537,304	3,202,590,330
TOTAL - 301 Companies	4,298,543	$4,593,493,659	$8,479,726,465

1 1983 Year End.
2 Includes 2 regulated co-ops.
3 Data incomplete - some municipal utilities not reporting.
4 Does not include gas utilities serving fewer than 650 customers.

MDPS Represents Public in Utility Rate Cases

The Department of Public Service is the state agency that represents the broad interests of the public in utility rate matters in Minnesota. Whenever a regulated gas, electric or telephone utility applies for higher rates, the Department of Public Service is immediately involved on behalf of the utility's customers.

The role of the Department of Public Service is to protect the customers of regulated utilities from unfair rates or treatment that may result from the monopoly environment in which public utilities operate.

Since 1975, the Department of Public Service has served as public advocate in nearly 150 contested utility rate matters involving nearly $1 billion - presenting facts and figures that resulted in savings to rate payers - of nearly $400 million.

The Department has experts in accounting, statistics, engineering, economics and related regulatory fields. The Department presents its own recommendations in rate matters based on extensive investigation of utility records and operating practices.

The Department presents various alternatives on financial, rate and service matters and takes an aggressive public oriented position in utility rate proceedings. The Department also investigates and makes recommendations relating to utility rates, service, territorial matters and depreciation certification.

Oft' used regulatory terms and phrases

Rate Base — The value of investment established by a regulatory authority upon which a utility is permitted to earn a specified rate of return. Generally, this represents the amount of property used and is useful in service to the public.

Additional Protective Services For Utility Rate Payers

In addition to active intervention in utility rate cases on behalf of utility customers, the Minnesota Department of Public Service (MDPS) provides additional protection for ratepayers on a day-to-day basis, including:

- Maintenance of utility rate and tariff books
- Monitoring quality and adequacy of utility services
- Monitoring utility accounting procedures and systems
- Analysis of securities issued by utilities
- Monitoring of financial stability of utilities
- Investigation of utility compliance with filed tariffs
- Enforcement of statutes, regulatory rules and policies
- Promote economically efficient and energy efficient rate designs
- Investigate economic impact resulting from changes in utility service area boundaries
- Intervening in federal regulatory proceedings that impact Minnesota utilities ratepayers
- Investigate utility investments and expenses for ratemaking purposes
- Evaluate utility depreciation rates and schedules
- Review of utility statistical reports and documents
- Supervise and conduct elections on rate regulation as requested by members of electric or telephone cooperatives

The Department of Public Service also conducts special studies, surveys and research as part of the Department's investigative responsibilities and at the request of the Public Utilities Commission.

Public Testimony Covers Wide Range in Utility Rate Case

When a regulated public utility seeks a rate increase, public hearings are held to give customers opportunity to express views regarding the increase and other related matters. Public hearings are less formal than evidentiary proceedings and provide opportunity for questions as well as comments. Utility customers may also submit written comments to the Administrative Law Judge or to the Public Utilities Commission. All public comments become part of the record for review by the Commission when it makes its decision in the case. It is important that utility customers attend and participate in public hearings to make their views known to the utility and to those who regulate utilities.

TIPS ON PRESENTING PUBLIC TESTIMONY

* Be sure to sign the attendance sheet and indicate your desire to testify.
* You may be asked to take an oath, sit or stand in a particular place, and probably speak into a microphone. Don't be daunted. There will be plenty of people to help you. Your own relaxed, informal attitude will overcome any formality. Do not hesitate to ask if you have a question about procedures.
* Testifying is merely telling others about your concerns, your knowledge and your experiences.
* Remember, the reason for the public hearing is to hear what YOU have to say.
* When you are called, stand-up, come forward.
* Give your name (and spell it out) and your address.
* If you are speaking for a group, identify the group or organization.
* Speak clearly, slowly. If there is a microphone, speak INTO the mike.
* Be honest, accurate and straightforward.
* Be brief, but don't be hurried.
* Avoid rambling. Direct your comments to the matter under consideration.
* Be as factual and as specific as possible...(particularly regarding service matters, utility bills or charges).
* Remember, your personal experiences are as pursuasive as facts and figures.
* Don't be upset if you get nervous (even "old hands" get nervous). A deep breath will do wonders to steady a shaky voice.
* Concentrate on your thoughts, not on yourself.
* Avoid reading your statement. If you have a written statement, summarize its contents, and turn in your statement after you have testified.
* Don't try to cover everything. If your issue has many important sides, divide up the points among other testifiers.
* If in doubt about a procedure, ask!
* Be prepared to answer questions about your testimony. Questions may be directed to clarify the record or to resolve your service problem. Do not feel intimidated by questions.

Utility Regulation

Service Area Maps Available

Thousands of miles of telephone and electric lines extend through Minnesota's 87 counties to provide essential energy and communication needs to citizens of the state.

By legislative action, telephone and electric utilities operate in assigned service areas and no other utility may serve outside its own service area without an order from the Public Utilities Commission.

Monitoring 235 assigned service areas for electric utilities and 645 telephone service areas is another responsibility of the Department of Public Service. The department also oversees more than 25,000 miles of electric and telephone service area boundaries and investigates requests for service area changes.

Utility service areas are generally stable and any change in utility service areas requires investigation by the Department of Public Service and approval of the Public Utilities Commission.

The Department of Public Service staff devotes considerable time clarifying utility boundary lines, investigating service area disputes and making recommendations for their resolution.

The department maintains more than 200 detailed maps of electric and telephone service areas which clearly define service area boundaries for use by utilities, utility customers, builders, construction engineers and agencies of government.

Utility service area maps are available for review in the offices of the department, 160 East Kellogg Boulevard, St. Paul. Reprints of utility service area maps are available to the public on a cost basis.

Minnesota laws dealing with electric utility service areas are contained in Minnesota Statutes 216B.37 through 216B.47. Minnesota laws relating to telephone service areas are covered in Minnesota Statutes 237.16 through 237.20.

Evidentiary Hearings

Technical data relating to financial issues, rate of return and rate design are dealt with in evidentiary hearings where witnesses present testimony and face cross examination from other participants in the rate case. Because it is the major intervenor in a rate case, the Department of Public Service has the responsibility to investigate and testify on all issues. Other intervenors, representing consumer or business interests, are usually involved in specialized issues. The case schedule and procedural policies for evidentiary hearings are the responsibility of the Administrative Law Judge assigned to the case.

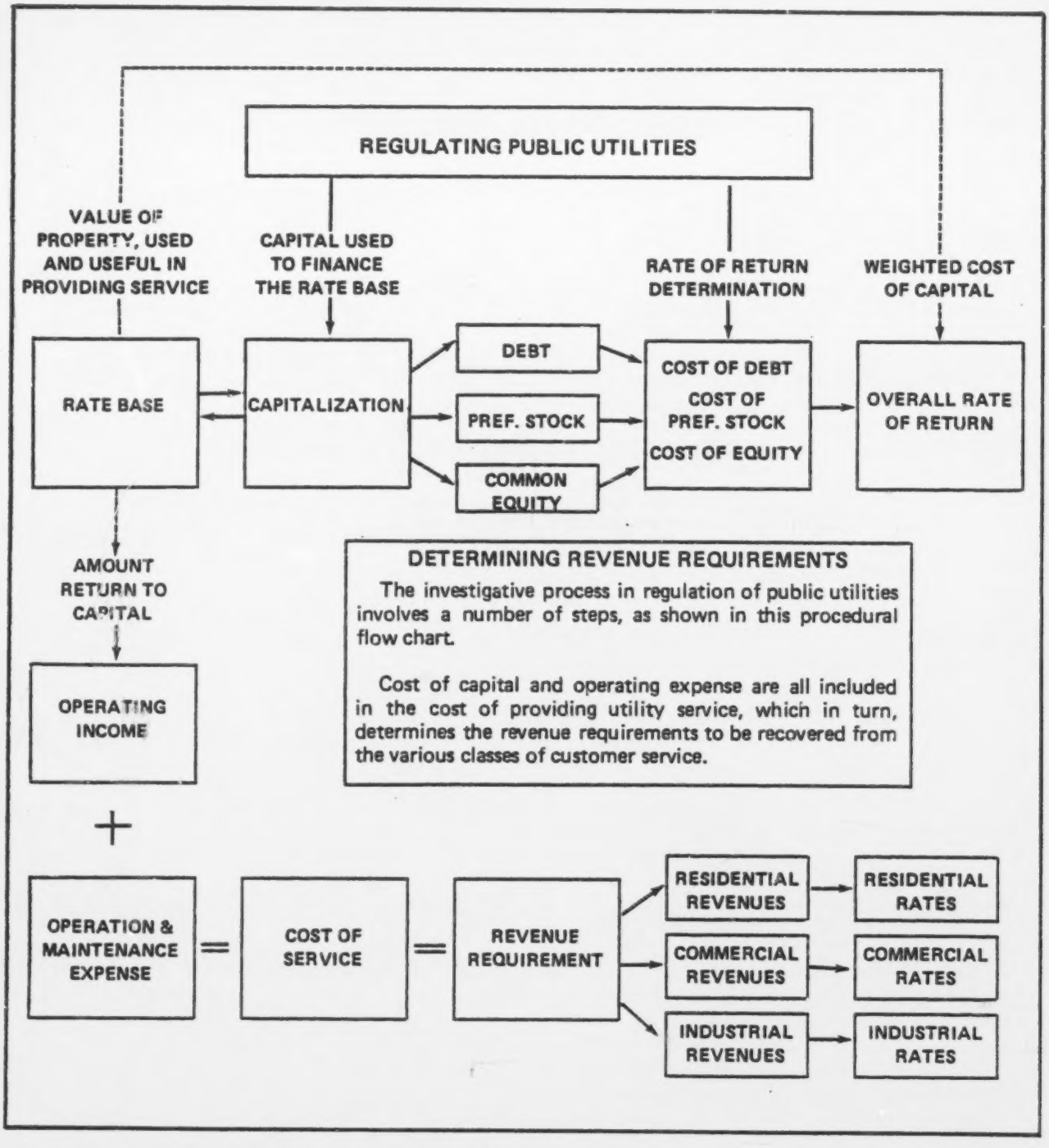
Notice to Rate Payers

Regulated utilities are required by rule to notify customers through bill stuffers and newspaper ads of any request for higher rates. Notice must include information on where the public can secure additional information regarding the rate request and any proposed service changes. Utilities must provide public access to copies of a rate filing, which are also available for public inspection in the offices of the Department of Public Service.

Administrative Law Judge

Utility regulatory proceedings are conducted by an Administrative Law Judge (ALJ), an independent examiner of the State Office of Administrative Hearings. The ALJ is responsible for the case schedule and case record. On conclusion of public and evidentiary hearings, the ALJ submits recommendations to the Public Utilities Commission on all issues in the case. Findings of the ALJ are not binding on the Commission.

Utility Regulation


REGULATING PUBLIC UTILITIES
VALUE OF PROPERTY, USED AND USEFUL IN PROVIDING SERVICE
CAPITAL USED TO FINANCE THE RATE BASE
RATE OF RETURN DETERMINATION
WEIGHTED COST OF CAPITAL
RATE BASE
CAPITALIZATION
DEBT
PREF. STOCK
COMMON EQUITY
COST OF DEBT
COST OF PREF. STOCK
COST OF EQUITY
OVERALL RATE OF RETURN
AMOUNT RETURN TO CAPITAL
OPERATING INCOME
DETERMINING REVENUE REQUIREMENTS
The investigative process in regulation of public utilities involves a number of steps, as shown in this procedural flow chart.
Cost of capital and operating expense are all included in the cost of providing utility service, which in turn, determines the revenue requirements to be recovered from the various classes of customer service.
+
OPERATION & MAINTENANCE EXPENSE
=
COST OF SERVICE
=
REVENUE REQUIREMENT
RESIDENTIAL REVENUES
COMMERCIAL REVENUES
INDUSTRIAL REVENUES
RESIDENTIAL RATES
COMMERCIAL RATES
INDUSTRIAL RATES

The utility revenue/rate-making process is time consuming and administratively complex. The process covers 10 months and entails more than 90 distinct steps. Participation involves numerous state agencies plus a variety of user and consumer groups. Public and evidentiary hearings extend over several weeks with more than 50 separate issues often debated during a major case. Participating parties contribute testimony into each of the steps shown above. Due process requirements are major factors in a rate case time table.

"Rate of Return" Is Vital Regulatory Consideration

In economic regulation of public utilities, "rate of return" serves as the cornerstone in the determination of the appropriate revenue requirement in a rate proceeding for a public utility.

Even a 1% difference in the allowed percentage of return amounts to many thousands of dollars in the revenue requirements of a major utility with a multi-million dollar rate base. For instance, the impact of a 1% change in the rate of return to a company with a $1,500 million rate base would amount to a $30 million change in revenue requirements. A 1% change in the return on equity for a similar size utility would amount to $12 million.

Minnesota Statutes 216B.16, Subd. 6 requires that regulated utilities be allowed to earn a "fair and reasonable return" on its investment. A fair and reasonable rate of return for a utility is based on a weighted average of the costs of the various kinds of capital which make up its total capitalization, including debt, preferred stock and common equity.

A fair rate of return is that rate, which when multiplied by the rate base (investment) will result in enough dollars to cover fixed charges of debt and preferred stock and also provide a fair and reasonable compensation to the common equity holders of the company.

Return on investment is the dollar amount earned by investors for allowing their assets (property, cash, etc.) to be used by a business. The term "return" refers to a dollar sum. The term "rate of return" refers to the percentage ratio of the dollar return to the dollar value of the assets invested.

An example of these items is illustrated by an individual's passbook savings account. The dollar amount of the interest earned from the account over a year is the "return." The interest rate applied is the "rate of return."

In a competitive environment, product prices (rates) and ultimately a producer's income and profit is determined by the free interaction of market forces. These market forces assure that the optimum level of goods and services are produced. However, in the noncompetitive environment of the utility industry, it is the responsibility of regulatory agencies to substitute for market forces and the absence of competition to assure that regulated public utilities provide an appropriate supply of quality service at reasonable rates.

In order to provide adequate service, a utility must be able to compete for necessary funds in the capital market, with earnings sufficient to offer competitive return to investors. Thus, it is also the responsibility of a regulatory agency to allow a utility a reasonable opportunity to earn a competitive return on its investment.

In the regulatory process, a utility is not guaranteed a specific dollar return by the regulatory commission, but is given opportunity to earn a rate of return which the Commission determines to be appropriate.

The Minnesota Department of Public Service presents testimony in contested rate cases, recommending what it concludes to be an appropriate rate or range of return determined to be fair and reasonable.

Oft' used regulatory terms and phrases

Retained Earnings — The portion of a company's earnings which are not paid out in dividends is called "retained earnings." This money is usually reinvested in the business.

Revenue Requirement — The revenue level necessary to achieve a specified rate of return.

Revenues — This is money received from customers for a product or services.

Utility Regulation

Cogeneration and Small Power Production in Minnesota

The US Congress and the Minnesota Legislature have declared that it is public policy to encourage generation of electricity from small scale renewable energy resources and cogeneration.

Based on that public policy, the Minnesota Public Utilities Commission has promulgated rules which set standards and terms for carrying out the provisions of state and federal law regarding cogeneration and small power production.

While cogenerators have some latitude in use of fuels, small power production facilities are limited to any combination of biomass, waste, geothermal or renewable resources (wind, sun, etc.) as a primary energy source. Cogenerators must meet operating and efficiency standards set by federal rules. Certification by the Federal Energy Regulatory Commission prevents challenge of the qualifying status of a facility.

Electric utilities are required to interconnect with and purchase the energy output of any cogenerator or small power producers within a utility's service area.

Cogenerators and small power producers are exempt from state and federal regulation as electric utilities. Electric utilities cannot charge discriminatory rates to cogenerators and small power producers for backup, maintenance and stand-by services. Rates paid for energy produced by cogenerators and small power producers must be based on state and federal requirements as described below:

Prices Paid for Output of Qualifying Facility

A. 40 Kw of capacity or less:

Net Energy Billing Rate-The utility will pay the same rate the customer pays for all energy supplied to the utility which is less than or equal to the amount purchased by the qualifying facility. For all energy supplied to the utility which is greater than the amount purchased by the qualifying facility, the utility will pay at the average retail rate for that class of customer.

Simultaneous Purchase and Sale Rate-The qualifying facility shall pay the normal retail rate for all energy and capacity supplied by the utility, and the utility shall purchase energy and capacity from the qualifying facility at a rate equal to the cost avoided by the utility by virtue of the purchase. Avoided costs are defined as the costs an electric utility would otherwise incur to generate power if it did not purchase electricity from the qualifying facility. The purchasing utility must provide data relating to "avoided cost" when applicable.

B. Greater than 40 Kw and less than or equal to 100 Kw.

The qualifying facility shall pay the normal retail rate for energy and capacity supplied by the utility and shall receive the "avoided cost" rate from the utility. This is the same pricing arrangement as established for simultaneous purchase and sale rate.

C. Greater than 100 Kw.

Rates are set by negotiation between the qualifying facility and the utility.

Regulatory References

Sections 201 and 210, Public Utilities Regulatory Policies Act (PURPA) 1978. US Code, Title 16, Section 824a-3 (Supplement III) (1979).

Utility Regulation

MDPS Monitors Utility Automatic Rate Changes

There are two types of automatic adjustments of utility rates: (1) fuel clause adjustments which are applied to purchased fuel used to generate electricity; and (2) purchased gas adjustments (PGA) which are applied to gas purchased from natural gas suppliers by distribution utilities for delivery to its customers. Electric distribution cooperatives and municipal utilities which do not generate energy, utilize a purchase power adjustment (PGA) which is based on purchase costs of energy, which reflect changes in fuel costs to their supplier.

The purpose of an automatic adjustment is to provide a utility with a means to recover a majority of the cost of fuel or cost of pipeline gas or cost of purchase power that is in excess of the cost included in the base rate.

Automatic adjustments receive considerable regulatory review by the Department of Public Service in accordance with established rules (Chapter 7825.2400-7825.3000) which involve the same investigation that would be included in a general rate application. Each fuel adjustment for electric utilities is computed monthly according to the amount of kwh sales and fuel costs in the previous two months. Thus, there is a two month lag (or moving average) in computing the adjustment amount. The purchase gas adjustment is charged only when there is an increase or decrease authorized by the Federal Energy Regulatory Commission in the gate price of natural gas charged by the pipeline supplier. The distribution gas utility can only recover the increased cost of the natural gas as charged by the supplier. The department investigates each change in the fuel adjustment by each utility.

Automatic rate adjustments by public utilities were used as early as 1920 to speed credit to utility customers during periods when utility rates were declining. Some abuses of automatic adjustments resulted when costs other than fuel and energy were allowed in adjustment clauses. Minnesota's rules on automatic adjustment clauses were developed in 1975 after extensive review of adjustment clauses used in all 50 states. There was wide participation by the public and utilities in a series of rules hearings regarding the proposed rules. Extensive research was also conducted into various approaches to developing a means to recover or credit increased or decreased fuel/energy costs. Under Minnesota's fuel adjustment rules a utility can only recover actual energy/fuel costs. The rule also requires credit to utility customers any time there is a reduction in fuel/energy costs to the utility. The automatic adjustment rule is also part of Minnesota's compliance with the federal Public Utility Regulatory Policies Act (PURPA).

Regulated Utilities

A regulated public utility must have approval of the Public Utilities Commission before changing any rates or charges. Requests for rate changes must follow procedural rules and must include evidence supporting any request for change in rates or service. The burden of proof for a rate increase rests upon the utility. All requests for rate changes are investigated by the Department of Public Service.

Public Utilities Commission

Five appointed Commissioners, serving six-year terms, make the final decision on all rate and service matters relating to regulated utilities. The Commission is required to follow statutory guidelines and Court precedents in determination of utility rates. The Commission has an independent staff to assist in evaluating contested case issues.

Utility Regulation

UTILITY FILINGS FOR RATE INCREASES

RATE CASES FILED - REGULATED UTILITIES
1975-1984

	GAS	ELECTRIC	TELEPHONE	TOTAL
1975	2	8	11	21
1976	1	13	16	30
1977	4	17	4	25
1978	1	7	7	15
1979	1	1	5	7
1980	6	3	8	17
1981	6	6	9	21
1982	3	2	4	9
1983	4	1	5	10
1984	2	0	2	4

RATE INCREASES REQUESTED - REGULATED UTILITIES
1975-1984

	GAS	ELECTRIC	TELEPHONE	TOTAL
1975	$ 898,384	$ 66,362,378	$ 53,560,394	$ 120,821,156
1976	7,253,000	62,200,522	842,586	70,296,108
1977	18,578,156	108,142,748	12,080,029	138,800,933
1978	7,400,000	48,970,223	515,685	56,858,129
1979	100,242	27,400	36,402,209	36,529,857
1980	44,002,897	156,451,465	102,378,370	308,433,432
1981	22,104,972	178,773,696	11,410,452	212,898,120
1982	37,048,448	2,133,912	96,040,353	135,222,713
1983	9,203,424	46,300	138,591,395	147,841,119
9-Year Total	$146,589,523	$623,108,644	$451,821,473	$1,221,519,640
1984	$ 2,144,332	$ -0-	$ 11,906,972	$ 14,051,304

SEVEN YEAR SUMMARY - REGULATED UTILITIES
1977-1984

	Utility Increases Requested	MDPS Recommendation	Amount Granted
1977	$138,800,933	$ 83,481,909	$ 86,857,786
1978	56,858,129	14,304,083	34,375,838
1979	36,529,857	(-6,579,349)	27,198,998
1980	308,433,432	142,884,269	215,115,826
1981	212,289,120	146,129,994	153,448,950
1982	135,222,713	30,583,472	89,273,088
1983	147,841,119	33,000,714	72,161,938
1984	14,051,304	230,000*	230,000*

* Total of completed cases.

Utility Regulation

Informal Utility Regulatory Matters Investigated by MDPS

In addition to evidentiary rate case activities, the Department of Public Service investigates and proposes recommendations on a variety of matters that require regulatory decisions by the Public Utilities Commission.

These matters include tariff changes, utility extension of service matters, fuel and purchased energy adjustments, review of securities issued by utilities for capital expansion, service area boundary changes, sale and transfer of property and depreciation certification.

In the biennium July 1, 1982 through June 30, 1984, the Department of Public Service investigated and provided recommendations for commission decision on 960 separate service and tariff matters.

Each rate and tariff matter is investigated by the department and the commission is given an investigation report and a recommendation for decision. The MDPS investigation report includes data on the economic impact, prior precedents, statutory basis for the recommended action, plus all necessary economic information to assist the commission in its decision.

These matters are presented to the commission during regularly scheduled meetings and during special meetings dealing with specific matters. The meetings are open to the public and to those interested in the proposals under consideration.

The table below provides a tabulation by fiscal and calendar year of non-rate case utility regulatory matters investigated by the Department of Public Service and presented to the commission for decision and action.

Deregulation of certain telephone equipment and exemption of most telephone companies from rate regulation has resulted in a reduced number of tariff filings from telephone utilities.

Informal Utility Regulatory Matters Investigated by MDPS

Fiscal Year	Gas	Electric	Telephone	Total
July 1, 1980 - June 30, 1981	101	90	396	587
July 1, 1981 - June 30, 1982	87	95	311	493
July 1, 1982 - June 30, 1983	174	173	223	570
July 1, 1983 - June 30, 1984	91	57	242	390
Calendar Year				
January 1, 1980 - December 31, 1980	63	56	424	543
January 1, 1981 - December 31, 1981	128	117	405	650
January 1, 1982 - December 31, 1982	151	164	333	648
January 1, 1983 - December 31, 1983	147	196	160	503
January 1, 1984 - September 30, 1984*	59	38	125	222

* 9 month total

Telecommunications

MINNESOTA'S TELEPHONE INDUSTRY[1]

		Percent of Total
Number of Customers		
Northwestern Bell	1,212,940	72.51
Continental Telephone Company	88,314	5.28
United Telephone Company	85,390	5.10
Central Telephone Company	53,820	3.22
19 Independent Companies	128,925	7.71
Total 23 Regulated Telephone Utilities	1,569,389	93.82
22 Cooperatives/Municipals[2]	55,264	3.30
49 Telephone Companies Under 2500[2]	48,118	2.88
Total 94 Companies	1,672,771	100.00
Number of Lines		
Residential Main Stations[3]	1,898,810	72.05
Business Main Stations[4]	736,418	27.95
Total 94 Companies	2,635,174	100.00
Percent Main Stations Regulated		94.90%
Telephones Per 100 Population		76.1
Percent of Households with Telephones		97.2
Gross Revenues		
Northwestern Bell	$ 992,187,100	81.42
Continental Telephone Company	53,299,622	4.37
United Telephone Company	42,087,294	3.45
Central Telephone Company	29,782,649	2.44
19 Independent Companies	58,367,230	4.79
Total 23 Regulated Telephone Utilities	$1,175,723,897	96.49%
22 Cooperatives/Municipals[2]	22,875,968	1.88%
49 Telephone Companies under 2500[2]	19,937,439	1.64
Total 94 Companies	$1,218,537,304	100.00%
Utility Plant In Service		
Northwestern Bell	$2,489,330,113	77.73%
22 Independent Companies	545,477,063	17.03
Total 23 Regulated Telephone Utilities	$3,034,807,176	94.76%
22 Cooperatives/Municipals[2]	97,517,842	3.05%
49 Telephone Companies under 2500[2]	70,265,312	2.19
Total 94 Companies	$3,202,590,330	100.00%
Investment Per Customer	$ 1,493.46	
Originating Telephone Calls Placed Daily[5]		
Local	15,863,961	
Long Distance (Intrastate and Interstate Toll)	1,016,220	
Total 94 Companies	16,880,181	

1 Data as of 12-31-83, Minnesota jurisdiction.
2 Telephone Cooperatives and companies with fewer than 2500 customers are not subject to state regulations.
3 Does not include residential extensions.
4 Does not include PBX lines or business extensions.
5 Minnesota only; 95 companies; originating calls only.

Telecommunications

Telephone Industry Facing Many Changes

The first telephone was placed in service in Minnesota in 1879. By the turn of the century, Minnesotans were served by more than 1,000 telephone companies which were operating in the state.

A significant number of the companies were one-family operations or local cooperatives serving fewer than 25 subscribers. Many did not provide exchange service, but rented switching facilities from another company in order to connect with the telephone network. The extent of calling was usually limited to subscribers of the serving company, and customers often provided their own maintenance of lines and telephones.

Telephone service in those early years meant sharing the line with upwards to 20 or more subscribers. Placing a call often entailed a long wait for an operator's response and considerable line noise and cross talk.

The era of unregulated competition in Minnesota's telephone industry ended with enactment of Chapter 152, laws of 1915, which ordered state jurisdiction over a maze of overlapping, duplicating telephone services that featured several telephone companies serving the same town, including the Twin Cities and Duluth.

When the Federal Post Office Department took over war time operations of the nation's telephone companies in 1918 and 1919, Minnesota listed 2,058 operating telephone companies. By 1920, when regulatory jurisdiction was returned to Minnesota's Board of Railroad and Warehouse Commissioners, a concentrated effort was directed toward consolidation of telephone companies and uniformity of telephone rates and services.

Despite consolidation efforts, Commission statistics as late as 1960 still listed 1,076 telephone companies operating in the state. However, most duplicating services were eliminated with assignment of an exclusive service area to each telephone company.

Minnesota's telephone companies operated in a totally regulated environment until 1979 when 24 telephone cooperatives were exempted from rate regulation. In 1981, an additional 56 small telephone companies serving fewer than 2,500 subscribers, were exempted from rate regulation. The exemption was extended to an additional 18 companies serving fewer than 15,000 subscribers in 1984. However, the five companies remaining under state rate regulation in 1985 serve 86% of Minnesota's telephone subscribers and collect more than 92% of local exchange revenues.

Technological changes have advanced telephone service from battery operated telephones, manual switchboards and mechanical switches to digital central offices with instantaneous push button calling to nearly any spot in the world via fiber optics cable, microwave or satellite.

Decisions of the Courts and directives by the Federal Communications Commission which broke up the AT&T/Bell System monopoly has resulted in new competition into telephone communications, especially in the sale of communications equipment and long distance services. While the number of telephone companies offering local exchange service has declined, a new era of unregulated competition has increased the number of companies offering long distance and ancillary telephone services in the state. Minnesota, for instance, was the first state to authorize customer-owned public coin telephones to be connected to the telephone network.

Additional changes in the structure of companies providing telephone service and the expansion of competition into new areas of communications services is also bringing changes to the regulatory process and the jurisdictional role of utility regulators.

Telecommunications

MINNESOTA TELEPHONE UTILITIES

Composite Statistics* - 94 Total Companies

	AMOUNTS
Plant (Intrastate Only)	
Plant In Service	$3,202,590,330
Construction Work In Progress	68,421,191
Plant Acquisition Adjustment	237,895
Plant Held for Future Use	386,342
Materials and Supplies	22,468,074
Less:	
Depreciation and Amortization Reserves	827,781,587
Net Book Costs	$2,466,322,245
Revenues and Expenses (Intrastate Only)	
Operating Revenues	$1,218,537,304
Depreciation and Amortization Expenses	201,105,809
Income Taxes	126,917,377
Other Taxes	97,824,049
Other Operating Expenses	581,747,431
Total Operating Expenses	$1,007,594,666
Net Operating Income	210,942,638
Other Income	10,193,162
Other Deductions	15,970,693
Net Income	$ 205,165,107
Customers (Intrastate Only)	
Residential - Yearly Average	1,476,316
Business - Yearly Average	189,613
Others - Yearly Average	6,842
Total	1,672,771
Telephones in Service (Intrastate Only)	
Residential Main Stations	1,898,756
Business Main Stations	736,418
Subtotal	2,635,174
PBX Telephones	387,109
Residential Extensions	633,238
Business Extensions	163,103
Total Number of Telephones	3,818,624
Average Number of Calls Per Telephone	
Local	1,516
Intrastate Toll	69
Interstate Toll	28
Other Statistics (Intrastate Only)	
Average Residential Monthly Bill	$30.20
Gross Plant Investment Per Customer	$1,493.46

* December 1983 Year End, Minnesota Jurisdictional only.

Telecommunications

MINNESOTA'S REGULATED TELEPHONE UTILITIES

Composite Statistics* – 23 Companies

	AMOUNTS
Plant (Intrastate Only)	
Plant In Service	$3,034,807,000
Construction Work In Progress	63,510,000
Plant Acquisition Adjustment	36,000
Plant Held for Future Use	90,000
Materials and Supplies	21,040,000
Gross Plant Investment (Subtotal)	$3,119,483,000
Less:	
Depreciation and Amortization Reserves	$ 762,087,000
Net Book Costs	$2,357,396,000
Revenues and Expenses	
Operating Revenues	$1,175,724,000
Depreciation and Amortization Expenses	190,692,000
Income Taxes	124,941,000
Other Taxes	95,450,000
Other Operating Expenses	562,209,000
Total Operating Expenses	$ 973,292,000
Net Operating Income	$ 202,432,000
Other Income	8,241,000
Other Deductions	12,299,000
Net Income	$ 198,374,000
Customers (Numerical Average Not Dollars)	
Residential - Yearly Average	1,387,034
Business - Yearly Average	177,468
Others - Yearly Average	4,887
Total	1,569,389
Telephones in Service (Including Equivalent	
Residential Main Stations	1,783,825
Business Main Stations	716,897
Subtotal	2,500,722
PBX Telephones	385,640
Residential Extensions	591,640
Business Extensions	149,730
Total Number of Telephones	3,627,732
Average Number of Calls Per Telephone	
Local	1,528
Intrastate Toll	67
Interstate Toll	28
Other Statistics	
Average Residential Monthly Bill	$39.01
Gross Plant Investment Per Customer	$1,477.48

* December 1983 Year End, Minnesota Jurisdictional only.

Telecommunications

MINNESOTA TELEPHONE UTILITIES

Operating Statistics

REGULATED TELEPHONE COMPANIES 3/	Number of Customers	Telephones	Plant-In-Service	1983 Operating Revenues
Arvig Telephone Company	6,814	7,727	15,710,188	3,935,040
Blue Earth Valley Telephone	6,478	11,366	7,827,810	2,724,197
Bridge Water Telephone Company	3,121	6,628	5,252,969	2,181,093
Central Telephone Company	53,820	92,121	79,079,931	29,782,649
Continental Telephone Minnesota	88,314	88,569	156,654,299	53,299,622
East Otter Tail Telephone	11,438	16,704	19,810,061	5,030,495
General Telephone Company	3,625	5,623	5,346,831	1,644,684
Hohman Telephone Company	5,288	6,581	9,512,592	2,110,140
Hutchinson Telephone Company	6,177	9,405	8,600,211	2,959,690
Lakedale Telephone Company	8,014	13,034	12,751,393	3,151,649
Mankato Citizens Telephone	21,853	30,855	33,157,164	13,486,594
Melrose Telephone Company	7,046	16,962	5,996,571	2,246,908
Mid-Communications	6,723	9,673	8,913,952	2,218,922
Mid-State Telephone Company	5,030	6,647	5,901,559	1,759,080
New Ulm Telecommunications, Inc.	7,763	14,134	9,828,755	3,695,619
Norman County Telephone Company	3,347	5,474	6,475,090	1,488,961
Redwood County Telephone Company	4,103	6,410	6,366,064	1,447,937
Scott-Rice Telephone Company	5,915	6,330	7,918,275	2,484,028
Sherburne County Rural	6,985	6,236	6,453,287	1,787,771
Sleepy Eye Telephone Company	4,204	6,664	7,044,781	1,758,631
United Telephone Company of MN	85,390	83,809	116,385,393	42,087,294
Wikstrom Telephone Company, Inc.	5,001	6,425	10,489,887	2,255,793
Total 22 Regulated (Non-Bell) Companies	356,449	457,377	545,477,063	183,536,797
Northwestern Bell Telephone	1,212,940	3,170,355	2,489,330,113	992,187,100
Total 23 Regulated Companies	1,569,389	3,627,732	3,034,807,176	1,175,723,897
Total 22 Cooperative/ 1/ Municipal Companies	55,264	98,338	97,517,842	22,875,968
Total 49 Telephone Companies 2/ Serving Fewer than 2,500 Customers	48,118	92,554	70,265,312	19,937,439
Total 94 Companies	1,672,771	3,818,624	3,202,590,330	1,218,537,304

1/ Cooperative and Municipal Telephone Companies were exempted from rate regulation January 5, 1979.

2/ Telephone Companies serving fewer than 2,500 subscribers were exempted from rate regulation May 22, 1981.

3/ Telephone Companies serving fewer than 15,000 subscribers were exempted from rate regulation in the 1984 legislative session.

Telecommunications

MINNESOTA TELEPHONE FACTS

	Number of Customers	Minnesota Operating Revenues	Plant In Service	Number of Telephones
23 Regulated Telephone Companies	1,569,389	1,175,723,897	3,034,807,176	3,627,732
22 Cooperative/ Municipal Companies	55,264	22,875,968	97,517,842	98,338
49 Companies (Fewer than 2,500 customers)	48,118	19,937,439	70,265,312	92,554
Total 94 Companies	1,672,771	1,218,537,304	3,202,590,330	3,818,624

The number of telephone companies operating in Minnesota has dropped dramatically over time. In 1921, there were more than 2,000 telephone companies operating in the state. In 1960, the number of telephone companies still exceeded 1,000. However, by 1970 the number dropped to 340 and by 1974 there were 164 companies. By 1977 the number had been reduced to 138 and the total dropped to 94 in 1984.

* * *

Northwestern Bell and four other regulated telephone companies serve about 86% of Minnesota's telephone subscribers. The five companies collect 92% of total telephone revenues. There are 18 independent companies serving 104,000 subscribers, 22 cooperative and municipal companies which serve 59,000 subscribers and 49 small independent companies with a total of 48,000 subscribers.

* * *

In the course of an average day, Minnesotans place 15.8 million telephone calls within their local exchange and place an additional million intrastate and interstate long distance calls.

* * *

Total plant investment of 94 telephone companies to provide telephone service in Minnesota totaled $3.2 billion in 1983. The average investment per telephone subscriber is $1,493. Northwestern Bell has the largest plant investment, representing 77.7% of the total.

* * *

Among Minnesota's 94 telephone companies, there are 44 telephone companies that provide service through a single exchange. Among all of the state's telephone exchanges, there are 163 that serve fewer than 500 subscribers.

* * *

Minnesota has 18,700 miles of telephone exchange boundaries, 22 times longer than the California coast. Telephone utilities may not provide service outside their assigned service areas without prior approval from the Public Utilities Commission.

* * *

Minnesota has 76.1 telephones per 100 of adult population and 97.2% of Minnesota's households have a telephone.

* * *

All Minnesota telephone companies are required to meet state standards for quality of service and customer service. Depreciation certification and service area requirements also apply to all telephone companies. Telephone companies which are exempted from rate regulation are required to file tariffs and comply with rules of the Public Utilities Commission and the Department of Public Service on all matters except changes in rates.

Telecommunications

RATE CASE SUMMARY
REGULATED TELEPHONE UTILITIES
Representative Rate Orders Issued since January 1, 1975

Utility and Docket Number	Date Filed	Increase Requested	MDPS Recommendation	Increase Granted	Allowed Rate of Return: Overall Return	Allowed Rate of Return: Return on Equity
AT&T						
P 442 / GR-83-655	11/4/83	12,029,000	-	withdrawn	-	-
Central						
P 405 / GR-81-231	5/22/81	3,400,000	2,014,165	2,442,076	11.21%	14.75%
P 405 / GR-83-300	6/1/83	4,954,991	2,368,119	1,732,039	11.67%	14.53%
Continental						
PR 121-1	3/7/75	3,300,000	1,842,500(R)	2,079,000	8.00%	12.3%
P 407 / GR-79-500	5/11/79	4,363,792	900,623	4,040,514	8.00%	13.3%
P 407 / GR-81-700	12/18/81	6,732,595	3,635,806	4,149,919	10.13%	14.8%
P 407 / GR-83-294	5/27/83	7,212,120	2,954,266	4,057,147	10.22%	14.53%
General						
PR 402-1	2/24/75	75,242	75,242	75,242	8.04%	-
P 410 / GR-78-546	4/14/78	85,558	80,417	80,417	9.20%	12.66%
P 410 / GR-82-64	1/29/82	200,000	145,000(S)	145,000	11.5%	14.75%
Mid-Communications						
P 416 / GR-75-64	8/1/75	148,000	83,381	83,000	4.42%	13.4%
P 416 / GR-80-431	6/9/80	140,000	115,269(S)	115,269	6.19%	13.25%
New Ulm						
P 419 / GR-78-369	3/6/78	154,101	154,101	154,101	10.46%	12.00%
P 419 / GR-81-767	12/28/81	321,444	264,799(S)	264,799	11.51%	13.75%
Northwestern Bell						
P 421 / GR-75-496	10/2/75	49,800,000	25,207,500(R)	33,100,000	8.07%	12.8%
P 421 / GR-77-171	2/18/77	11,835,000	8,609,000(S)	8,609,000	7.8%	12.8%
P 421 / GR-77-1509	12/2/77	63,000,000	(439,000)	-0-	9.03%	11.56%
P 421 / GR-78-388	4/6/79	28,382,000	(8,432,000)	20,807,000	10.19%	12.98%
P 421 / GR-80-911	12/29/80	96,000,000	8,100,000	63,521,000	11.74%	14.7%
P 421 / GR-82-203	4/20/82	89,975,000	3,700,000	56,500,000	12.02%	14.99%
P 421 / GR-83-600	9/29/83	109,500,000	32,000,000	57,500,000	11.71%	14.5%
United						
P 430 / GR-79-644	7/30/79	3,406,000	757,960	2,074,679	10.18%	12.04%
P 430 / GR-80-612	9/5/80	5,700,000	4,058,099	3,757,451	11.1%	12.58%
P 430 / GR-82-200	4/27/82	5,678,374	2,659,824	3,704,000	12.36%	14.9%
P 430 / GR-83-599	9/2/83	4,895,284	2,551,364	3,372,627	12.25%	14.59%
P 430 / GR-84-579	10/12/84	4,616,447	-	-	-	- *
Wikstrom						
P 432 / GR-76-608	3/16/76	177,000	138,032	138,000	2.73%	15.00%
P 432 / GR-79-450	4/30/79	230,916	105,249	187,986	2.99%	14.5%
P 432 / GR-81-70	1/30/81	341,800	269,595	341,800	3.24%	16.0%

* Pending

Electric Utilities

MINNESOTA'S ELECTRIC INDUSTRY[1]

	Customers Served	Gross Revenues	Utility Plant In Service
48 Member-Owned Electric Cooperatives [2]	426,037	$ 411,616,072	$ 669,113,135
6 Investor-Owned Electric Companies	1,058,276	$1,461,315,000	$3,910,620,000
125 Municipal Electric Utilities [3]	261,994	241,592,999	N/A
Total - 179 Utilities	1,746,307	$2,114,524,071	$4,609,753,135

1/ 1983 year end.
2/ Includes 2 regulated cooperatives.
3/ Data incomplete -- all utilities not reporting.

Electric utilities serving Minnesota use three types of generating facilities: baseload plants to operate at maximum output for long periods to provide the bulk of a utility's energy output; intermediate generating units that are more flexible and placed "on line" when demand exceeds the output of the baseload units; and peaking plants, designed for quick start-up and shut-down, which are used only when demand for electricity exceeds baseload and intermediate generating capacity.

Investor-owned utilities generate most of the electricity required to meet their customer's needs, and to provide wholesale power to municipal utilities and the midwest power pool as needed. Most electric distribution cooperatives do not generate power, but purchase electricity for resale from seven generation and transmission cooperatives which are owned by the cooperatives they serve. Generation and transmission cooperatives are not subject to state or federal rate regulation, but must comply with financial and operating policies and procedures of the Rural Electric Administration (REA).

About one-third of Minnesota's electric energy goes to residential customers, 36 percent is used by industry and the remainder by the commercial sector.

Demand for electricity fluctuates minute by minute, hour by hour, day to day and season to season. Since there is no practical way of stockpiling or storing electricity in large quantities, an electric utility must have generating capacity or purchase arrangements to meet the varying demand placed on its system. The demand, or load, placed on the system varies constantly with the changing needs of the wide variety of customers served by the distribution system.

Thus, one utility may have greater demand in summer months while another utility may have its greatest usage in winter months. Some utilities have a morning and an evening peak, while another utility may have a flat peak extending over several hours. There is generally greater day/night variances in energy demand than there is between seasons.

Electric Utilities

MINNESOTA'S REGULATED ELECTRIC UTILITIES*

Company Statistics

Name of Utility	Minnesota Customers Served	Minnesota Operating Revenues	Percent of Electric Revenues	Utility Plant-In-Service
Bigfork Valley Electric	209	346,000	.023%	197,000
Dakota Electric Association . .	34,542	39,942,000	2.642	50,497,000
Frost-Benco Cooperative	8,634	10,371,000	.686	16,303,000
Home Light and Power.	385	383,000	.025	355,000
Interstate Power.	37,987	36,227,000	2.397	106,477,000
Minnesota Power	102,055	317,910,000	21.031	914,419,000
Northern States Power	864,017	1,031,090,000	68.211	2,660,367,000
Otter Tail Power.	53,623	75,359,000	4.985	228,805,000
Total	1,101,452	$1,511,628,000	100.00%	$3,977,420,000

* All data 1983 year end; does not include nonregulated electric cooperatives or municipal utilities.

Minnesotans are provided electric service by 179 electric utilities, including 48 distribution cooperatives, 125 municipal utilities and six investor-owned utilities. The six investor-owned utilities serve more than a million customers. The 48 electric cooperatives serve about 426,000 members, and 125 municipals serve 261,000 customers, mostly in small communities with less than 1,000 customers.

Six investor-owned electric utilities and two electric cooperatives are under state rate regulation. Those eight utilities serve nearly 64% of the state's electric ratepayers and collect over 70% of the electric revenues.

Northern States Power is the largest electric utility in Minnesota, serving nearly 865,000 customers. Minnesota Power ranks second with 102,000 customers. Otter Tail Power ranks third with 53,000 customers. Interstate is fourth with 38,000 customers. Dakota electric is fifth among regulated utilities, serving nearly 35,000 member customers. Revenues of Northern States Power Company and Minnesota Power Company make up nearly 90% of the total revenues of all regulated electric utilities in Minnesota.

In order to provide electric service, Minnesota's six investor-owned electric utilities have a combined plant investment exceeding $4 billion. Minnesota's 48 distribution cooperatives have a plant investment in excess of $669 million. Total plant investment of municipal electric utilities is likely to total several hundred million. Electric cooperatives have an additional investment in a proportionate ownership share of the generation and transmission cooperative which provides basic electricity requirements.

Electricity in Minnesota is generated with coal, nuclear material, oil, gas and hydro power. Coal is the predominant fuel used for generation, with uranium ranking second.

MINNESOTA'S REGULATED ELECTRIC UTILITIES

Composite of Statistics* -- 8 Companies**

Plant (Intrastate Only)	Amounts
Plant in Service	$3,977,390,000
Construction Work in Progress	263,947,000
Plant Held for Future Use	3,250,000
Materials and Supplies	134,855,000
Less:	
Depreciation and Amortization Reserves	1,269,057,000
Net Book Costs	$3,110,385,000

Revenues and Expenses (Intrastate Only)	
Operating Revenues	1,511,628,000
Depreciation and Amortization Expenses	125,740,000
Income Taxes	105,037,000
Other Taxes	177,716,000
Other Operating Expenses	842,074,000
Total Operating Expenses	$1,250,567,000
Net Operating Income	261,061,000
Other Income	15,597,000
Other Deductions	37,407,000
Net Income	$ 239,251,000

Customers (Intrastate Only)	
Residential - Yearly Average	976,001
Commercial - Yearly Average	118,939
Industrial - Yearly Average	1,217
Others - Yearly Average	5,295
Total	1,101,452

Other Statistics (Intrastate Only)	
Average Annual Residential Use - KWH	7,374.00
Average Residential Cost Per KWH ($)	$ 6.12
Average Residential Monthly Bill	$ 37.83
Gross Plant Investment Per Customer	$3,611.04

* As of December 31, 1983, Minnesota Jurisdiction only.

** Big Fork Valley Electric - Dakota Electric Association - Frost-Benco Electric - Home Light & Power - Interstate Power Company - Minnesota Power Company - Northern States Power Company - Otter Tail Power Company - Does not include data from municipals or unregulated electric cooperatives.

RATE CASE SUMMARY – REGULATED ELECTRIC UTILITIES

Rate Orders Issued from January 1, 1975

Utility and Docket Number	Date Filed	Increase Requested	MDPS Recommendation	Increase Granted	Allowed Rate of Return: Overall Return	Allowed Rate of Return: Return on Equity
Dakota Electric Co-op						
E 111 / GR-81-120	2/23/81	$ 1,726,833	$ 1,336,339	$ 1,610,005	8.68%	14.15%
E 111 / GR-82-228	4/30/82	2,130,000	908,663	1,203,341	8.42%	12.82%
Frost-Benco Co-op						
E 104 / GR-81-608	10/22/81	685,955	163,146	670,218	8.12%	13.04%
Home Light and Power						
E 014 / GR-79-175	5/11/79	27,400	25,411	25,411	11.2%	13.7%
E 014 / GR-83-293	5/27/83	46,300	40,744	40,744	13.18%	14.5%
Interstate Power Co.						
ER-1-1	1/30/75	231,156	7,161	(141,854)	7.94%	12.7%
E 001 / GR-76-1826	9/14/76	2,203,130	1,194,227	1,239,000	8.68%	13.0%
E 001 / GR-78-1065	9/27/78	4,996,081	3,454,618	4,060,181	9.08%	12.75%
E 001 / GR-81-345	7/2/81	5,621,000	3,685,137	4,912,490	10.13%	14.85%
Minnesota Power (MP&L)						
E 015 / GR-76-408	2/18/76	9,133,900	3,878,670	(2,100,000)	9.51%	13.25%
E 015 / GR-77-360	4/22/77	31,300,000	21,745,848	25,200,000	9.82%	13.00%
E 015 / GR-78-514	4/10/78	40,960,000	5,640,000	25,274,379	9.76%	13.0%
E 015 / GR-80-76	2/1/80	65,937,314	53,173,600	58,220,170	9.91%	13.47%
E 015 / GR-81-250	5/1/81	37,089,700	31,195,609	25,589,641	10.54%	14.70%
Northern States Power						
ER-2-1	1/2/75	58,717,000	37,200,000	38,640,000	8.55%	12.85%
E 002 / GR-76-934	5/3/76	48,300,000	20,697,500(E)	32,696,000	9.00%	13.0%
E 002 / GR-77-611	5/29/77	69,861,000	40,573,000	37,869,000	9.05%	12.66%
E 002 / GR-80-316	5/1/80	77,530,000	53,128,000	55,478,000	9.73%	13.5%
E 002 / GR-81-342	7/1/81	115,550,000	74,744,000	79,974,000	10.68%	14.7%
E 002 / GR-81-342	Decision after reconsideration			80,483,000	10.69%	14.7%
Northwestern Wisconsin						
E 016 / GR-76-3640	11/23/76	325	325(S)	325	10.5%	11.9%
E 016 / GR-80-88	2/12/80	866	866(S)	866	11.47%	14.00%
E 016 / GR-82-122	2/23/82	3,912	3,912(S)	3,912	13.71%	16.00%
Otter Tail Power Co.						
ER-17-1	4/30/75	4,400,000	2,726,208	4,124,328	9.158%	13.28%
E 017 / GR-77-916	7/29/77	3,625,192	1,642,429	2,661,341	9.3%	13.0%
E 017 / GR-80-277	4/14/80	13,000,000	(161,617)	3,686,662	10.14%	13.57%
E 017 / GR-81-315	6/15/81	18,100,208	15,923,492	15,617,198	11.06%	14.83%

(E) - Mid point of proposed range. (S) - Stipulated.

Natural Gas

MINNESOTA'S NATURAL GAS INDUSTRY[1]

	Customers Served	Gross Revenues	Utility Plant In Service
10 Investor-Owned Gas Companies [3]	825,715	$1,193,257,000	$667,383,000
18 Municipal Gas Utilities [2]	53,750	$ 67,175,284	N/A

1/ 1983 year end.
2/ Data incomplete - some municipal utilities not reporting.
3/ Does not include gas utilities serving fewer than 650 customers.

The natural gas industry is comprised of three segments: production, transmission and distribution. Minnesota, with no production facilities, has only transmission (wholesale) and distribution (retail) natural gas companies doing business within its borders.

Minnesota's regulatory authority extends to 10 gas utilities providing natural gas at retail. Wholesale prices of natural gas supplied by pipelines to Minnesota gas distribution utilities is determined by the Federal Regulatory Energy Agency in accordance with federal laws. State regulation of gas utilities does not extend to the wholesale cost of natural gas, but rather to the cost of distribution and customer services of each gas utility. Concern regarding federal pricing policies resulted in Minnesota's active intervention in gas cases before the Federal Energy Regulatory Commission through the Department's Energy Issues Intervention Office.

Federal regulation of the natural gas industry has been sporatic. Natural gas pipelines were excluded from the jurisdiction of the Interstate Commerce Commission in 1906. From that time until the passage of the Natural Gas Act in 1938, interstate natural gas pipelines were free of federal regulation. In 1954, the Supreme Court held that the Federal Power Commission had authority to regulate prices producers charged to interstate pipeline companies including jurisdiction over wholesale rates for gas at the wellhead and in the interstate market.

In 1977 the Federal Power Commission (FPC) was eliminated and the Congress established the Federal Energy Regulatory Commission (FERC) to take over regulation of the natural gas industry. Congress and the White House directed FERC and the Department of Energy to develop a national energy policy. After lengthy debate, Congress enacted the Natural Gas Policy Act (NGPA) in 1978 which remains in effect.

Natural Gas

MINNESOTA'S REGULATED NATURAL GAS UTILITIES*

Company Statistics

Name of Utility	Minnesota Customers Served	Minnesota Operating Revenues	Percent of Natural Gas Revenues	Utility Plant-In-Service
Great Plains Natural Gas	12,658	16,051,000	1.345%	10,533,000
Inter-City Gas Corporation . . .	20,271	52,976,000	4.440	19,455,000
Interstate Power	8,890	10,575,000	.886	4,306,000
Iowa Electric Light.	4,394	5,116,000	.429	1,877,000
Minnegasco, Inc.	419,920	575,173,000	48.202	321,257,000
Montana-Dakota Utilities	1,772	2,383,000	.200	1,526,000
North Central Public Service . .	45,127	42,157,000	3.533	26,608,000
Northern States Power.	229,135	313,588,000	26.280	228,577,000
Peoples Natural Gas.	81,666	173,828,000	14.568	52,411,000
Western Gas Utilities.	1,882	1,410,000	.118%	813,000
Total.	825,715	$1,193,257,000	100.00%	$667,383,000

* All data 1983 year end; does not include nonregulated municipal gas utilities or gas utilities serving fewer than 650 customers.

Minnesota's 10 investor-owned regulated natural gas distribution utilities serve more than 825,000 customers through nearly a half-million miles of local distribution gas mains. An additional 55,000 natural gas customers are served by 18 municipal gas utilities and two local distributors with fewer than 650 customers.

Minnegasco is Minnesota's largest gas utility, serving nearly 420,000 customers in 162 Minnesota communities. Minnegasco's 1983 Minnesota gas sales exceed $575 million, about 48% of the $1.2 billion in total sales of Minnesota's regulated gas utilities. Northern States Power, the second largest distributor, provides natural gas to nearly 230,000 customers with 1983 revenues exceeding $313 million. Minnesota's 10 regulated gas utilities have a combined investment of $667 million in plant facilities.

Minnesota is served by four interstate natural gas pipelines, providing gas from both domestic and Canadian sources. Natural gas provides nearly 30% of Minnesota's energy requirements. Northern Natural Gas Company provides about 95% of the natural gas supplied to Minnesota.

Minnesota's regulatory authority extends only to gas utilities providing natural gas at retail. Wholesale gas rates are regulated by the Federal Energy Regulatory Commission. Two gas distribution utilities serving fewer than 650 customers and 18 municipal gas utilities are exempted from state rate regulation.

Minnesota's gas utilities have developed extensive above ground and underground gas storage facilities to assure a continuing supply of gas to customers when demand is in excess of supplies available from regular pipeline sources. Peak sharing facilities are strategically located at various points in the state to assure continuous service and supplies.

Natural Gas

MINNESOTA'S REGULATED NATURAL GAS UTILITIES

Composite Statistics – 10 Companies*/**

Plant (Intrastate Only)	Amounts
Plant in Service	$ 667,383,000
Construction Work in Progress	8,259,000
Plant Acquisition Adjustment	2,915,000
Materials and Supplies	25,664,000
Less:	
Depreciation and Amortization Reserves	234,020,000
Contributions in Aid of Construction	14,000
Net Book Costs	$ 470,187,000

Revenues and Expenses (Intrastate Only)	
Operating Revenues	$1,193,257,000
Depreciation and Amortization Expenses	23,735,000
Income Taxes	27,088,000
Other Taxes	36,457,000
Other Operating Expenses	1,062,742,000
Total Operating Expenses	$1,150,022,000
Net Operating Income	43,235,000
Other Income	(912,000)
Other Deductions	4,110,000
Net Income	$ 38,213,000

Customers (Intrastate Only)	
Residential - Yearly Average	749,256
Commercial - Yearly Average	72,030
Industrial - Yearly Average	1,395
Others - Yearly Average	3,034
Total	825,715

Other Statistics (Intrastate Only)	
Average Annual Residential Use - MCF	122.61
Average Residential Cost Per MCF ($)	$ 5.93
Average Residential Monthly Bill (includes heating customers)	$ 60.49
Gross Plant Investment Per Customer	$808.25

* As of December 31, 1983, Minnesota Jurisdiction only.

** Great Plains Natural Gas Company - Inter-City Gas Company - Interstate Power Company - Iowa Electric Light and Power Company - Minnesota Gas Company - Montana-Dakota Utilities - North Central Public Service Company - Northern States Power Company - Peoples Natural Gas Company - Western Gas Utilities. Does not include data from non-regulated municipal gas utilities or gas utilities serving fewer than 650 customers.

Natural Gas

RATE CASE SUMMARY – REGULATED GAS UTILITIES

Rate Orders Issued from January 1, 1975

Utility and Docket Number	Date Filed	Increase Requested	MDPS Recommendation	Increase Granted	Allowed Rate of Return: Overall Return	Allowed Rate of Return: Return on Equity
Great Plains						
U-75-433	9/24/75	$ 625,000	$ 242,861	$ 331,000	9.29%	13.55%
G 004 / GR-78-690	5/15/78	761,244	347,782	202,448	9.89%	13.0%
G 004 / GR-81-503	9/30/81	969,202	459,005	587,003	12.84%	14.83%
G 004 / GR-83-465	9/8/83	874,829	541,273	463,488	12.66%	14.85%
Inter-City						
G 007 / GR-81-300	6/2/81	2,800,000	2,201,000	2,248,200	11.49%	15.00%
G 007 / GR-83-317	6/10/83	3,251,800	746,965	2,787,288	12.60%	15.25%
Interstate Power						
GR 1-1	4/8/75	273,040	239,142	239,000	8.00%	13.46%
G 001 / GR-80-683	9/29/80	420,947	358,838	358,838	9.73%	13.45%
Iowa Electric						
G 006 / GR-80-780	10/31/80	428,000	379,390	423,403	9.85%	13.44%
G 006 / GR-82-426	8/31/82	371,448	230,356(S)	230,356	11.08%	15.05%
Minnesota Gas Company						
G 008 / GR-77-1237	10/3/77	16,900,000	7,474,000	9,143,000	10.06%	12.47%
G 008 / GR-80-630	8/29/80	28,300,000	11,580,000(R)	17,317,000	11.78%	14.43%
G 008 / GR-82-249	5/21/82	29,758,000	18,571,000	22,235,000	13.00%	14.96%
Montana Dakota						
G 009 / GR-77-704	6/6/79	283,800	278,882	278,882	8.97%	12.0%
G 009 / GR-81-448	9/2/81	178,670	166,000	174,000	11.31%	14.7%
G 009 / GR-84-128	3/27/84	269,497	-	-	-	- *
North Central						
G 010 / GR-77-221	3/1/77	1,105,700	482,094	780,201	10.82%	13.33%
G 010 / GR-80-472	6/20/80	1,801,489	1,659,921(S)	1,461,354	13.01%	14.50%
G 010 / GR-81-780	12/31/81	1,480,000	463,315(R)	721,479	13.84%	14.96%
G 010 / GR-83-333	6/10/83	2,109,795	1,017,983	1,368,605	13.61%	14.9%
Northern States Power						
G 002 / GR-76-3627	11/19/76	6,439,000	4,460,000	5,481,000	9.08%	12.9%
G 002 / GR-77-1015	8/19/77	289,000	238,104	238,000	9.06%	12.6%
G 002 / GR-78-1052	9/22/78	7,443,000	4,840,000	4,821,932	9.29%	12.9%
G 002 / GR-80-556	7/30/80	11,007,000	8,830,200	9,009,900	10.03%	13.77%
G 002 / GR-81-508	10/1/81	16,583,600	9,267,800	13,512,400	10.77%	14.74%
Peoples Natural Gas						
G 011 / GR-80-450	12/1/80	2,121,563	1,288,000	1,452,000	12.45%	14.5%
G 011 / GR-82-65	1/29/82	6,919,000	4,516,000	5,065,000	13.53%	14.9%
G 011 / GR-83-188	4/8/83	2,967,000	880,000	829,000	13.01%	15.08%
Western Gas						
G 012 / GR-79-7	1/2/79	100,242	63,408(S)	63,408	10.80%	-
G 012 / GR-81-106	2/23/81	93,500	46,792	78,915	12.99%	14.0%

* Pending

(R) - Mid point of proposed range. (S) - Stipulated.

Weights and Measures

Weights and Measures Unit Serving Since 1895

The Weights and Measures Division of the Minnesota Department of Public Service was established in 1911 as the successor to the State Scale Department which began operations in 1895. It is one of the oldest continuously operating agencies in state government.

The division has three major commercial regulatory functions - the state metrology laboratory, the enforcement operation and the petroleum quality testing laboratory.

The metrology laboratory is the foundation of the division's other operations. The State standards of mass, length and volume are maintained and used in the laboratory and serves as Minnesota's only reference to the National Bureau of Standards and the only means of providing uniformity of weight or measure for commerce in the state.

Much of the work performed in the laboratory is concentrated in the areas of precision mass and volume measurement where the division has the capability of calibrating weights from one-thousandth of a gram up to 100,000 pounds. The standards and analytical balances used to calibrate weights are maintained in a temperature controlled, virtually dust free environment to allow the high levels of precision and calibration accuracy to one-millionth of a gram, as required for some Minnesota industries.

The precision, accuracy and uniformity which begins at the metrology laboratory are transferred to Minnesota commerce through industrial metrology laboratories and through the weights and measures enforcement unit to all weighing and measuring equipment in the state.

The division has its greatest commercial impact at the enforcement level. Positioned as a neutral party, the division protects both buyer and seller in weighing and measuring transactions. The division's regulations and enforcement activities control many billions of dollars of commerce each year. An estimated $13.5 billion of commerce in the grain and petroleum industries alone (most products are weighed or measured at least twice) would be thrown into confusion without the regulatory services of the MDPS Weights and Measures Unit.

Petroleum product quality is regulated and monitored by the petroleum inspection unit which annually tests 17,000 petroleum samples. Petroleum products are sampled and tested wherever they are produced, stored or offered for sale or use.

Statutory authority for weights and measures regulatory responsibilities is provided in Minnesota Statutes, Chapter 239.

Petroleum Laboratory Tests Kerosene Sulfur Content

Potential health problems resulting from use of high sulfur kerosene in nonvented heaters have been reduced as a result of a new testing device in use by the Weights and Measures Division.

The Weights and Measures unit tests bulk supplies of kerosene to ensure the sulfur content does not exceed the .04% maximum allowed by Minnesota law.

This protective service is particularly important because of the increased use of indoor nonvented kerosene heaters and the possible high levels of air pollutants such as sulfur dioxide as a health threat to some individuals.

In addition to bulk testing of dealer kerosene supplies, the Weights and Measures unit analyses the sulfur content of kerosene for individuals and industrial users on request.

Weights and Measures

WEIGHTS AND MEASURES

INVESTIGATION/ENFORCEMENT ACTIVITY

JULY 1983 THROUGH JUNE 1984

DEVICES TESTED

	NUMBER TOTAL	NUMBER CORRECT	ADJUSTED OR REJECTED NUMBER	PERCENT
Heavy Capacity Scales ***	2,800	2,282	518	18.5%
Livestock Scales	383	325	58	15.1%
R.R. Track Scales	135	114	21	15.5%
Grain Hopper Scales	237	212	25	10.4%
Law Enforcement Scales	250	220	30	12%
Light Capacity Scales	12,019	11,466	553	4.6%
Gasoline Pumps	24,156	22,320	1,836	7.6%
Petroleum Meters	4,323	2,723	1,216	28.1%*
			403	9.3%**
LPG Meters	1,281	494	718	56.0%*
			90	7.0%**
Petroleum Product Tests	16,898	16,763	135	0.8%

CHECKWEIGHING

Packages Weighed	62,454	51,837	10,617	17.4%

LABORATORY CALIBRATIONS

Weights	9,600
R.R. Test Cars	11
Liquid Measures	240
Prescription Balances	40
Other Precision Balances	25

COMPLAINT INVESTIGATIONS

Complaints Investigated	700

* Adjusted
** Rejected
*** Over 4,000 lbs. capacity

Enforcement Unit Assures Accurate Weights, Measures

Inspections Verify Accuracy of Weights

The enforcement unit of the Weights and Measures Division is involved in a wide range of inspection, testing and enforcement activities covering commercial weighing and measuring transactions. The thirty investigators assigned to the unit are responsible for the accuracy of every commercial weighing and measuring device in the state.

State statutes provide investigators with special police powers. They have the authority to enter any premises for the purpose of inspecting and testing weighing and measuring devices and weighed or measured commodities. This authority allows them to reject and prohibit commercial use of any device that is not in compliance with the technical and accuracy requirements prescribed by MDPS rules.

In the performance of these responsibilities the unit generates impressive numbers of tests each year (see chart). An emphasis on routine, unannounced inspections has yielded a dramatic increase in the proportion of devices found in compliance -- because owner-operators have had to adopt improved maintenance procedures.

Two of the unit's most important activities are the accuracy verification and complaint investigation programs which allow investigators to check actual every day use of devices. An accurate device is meaningless if it is not used accurately by its operator. These programs help control weighing errors by investigating consumer complaints and by checking prepackaged and measured commodities to determine package accuracy.

In order to test devices ranging from prescription balances to gas pumps to railroad track scales, the enforcement unit employs a wide variety of expensive, complicated and heavy test equipment. Field test measures range from a fraction of a pint to 500 gallons capacity. Test weights range from 1/1000 lb. through 30 lbs. test sets for grocery scales, up to 1,000 and 10,000 lb. weights and 90,000 lb. test cars for truck and railroad scales. The test equipment is the only official means of regulating commercial weighing and measuring devices in the state.

The enforcement unit also tests gasoline, fuel oil and kerosene to determine whether these products meet Minnesota standards for quality and purity. The program assures consumers high quality petroleum products.

The enforcement supervisor operates a program of voluntary registration for weighing and measuring device repair people. Registrants are permitted to place new and repaired equipment into commercial service. Their work is monitored by the enforcement investigators.

Direct Charges

Since July 1, 1981 the division has largely supported itself through a system of user fees created by the Legislature.

The system involves direct charges to business owners for every weighing or measuring device tested by the division's field inspectors. Fees are payable within thirty days of the inspection.

It is important to note that this fee system, although controversial in nature, has been vital in reducing the burden on the general fund. Approximately 83% of the division's general fund appropriation is refunded by the collection of inspection fees.

MDPS Metrology Laboratory Holds U.S. Standards

The MDPS metrology laboratory provides a statewide reference point for national uniformity in the measurement of mass, volume and length.

The MDPS metrology laboratory is certified with the Natural Bureau of Standards, which means that Minnesota standards are maintained and cross-checked and that the metrologist reports regularly to the national bureau.

The primary state standards of mass, length and volume supplied by the National Bureau of Standards are the only official reference for all of the weights and measures used in the state. Any weight or measure calibrated in the MDPS laboratory is directly traceable to the United States standards.

These standards are used as the reference point from which approximately 10,000 other weights and measures are calibrated each year. These other weights and measures are, in turn, used in: pharmacies to determine accurate quantities for prescriptions; in scientific and engineering laboratories to make precise measurements for education, industry and defense; in grain grading laboratories to determine the quality of Minnesota's farm produce; in field installation, maintenance and testing of commercial weighing and measuring equipment used in grocery stores, gasoline stations, grain elevators and nearly all other types of businesses.

The laboratory calibrates all field standards for state weights and measures investigators, 350 registered repair services, various law enforcement agencies, and local units of government. Several hundred commercial and industrial operations also submit standards to the laboratory.

MDPS laboratory activities ensure that a pound is a pound and a gallon is, indeed, a gallon. The laboratory is an essential component of state commerce.

Weighing Errors Impact Economy

The weights and measures division is responsible for the accuracy of all transactions involving weight or measure. While it may appear that the consumer is affected by weighing and measuring transactions only during weekly trips to the grocery store and the gas station, the actual scope and value of commodities bought and sold across weighing and measuring devices is far greater. The value of almost any consumer commodity is affected by a number of weighing and measuring transactions before the final retail sale.

Commodities are frequently sold two or three times through regulated weighing and measuring devices before they reach the consumer. In a very real sense, the total value of commodities sold through regulated devices is two or three times the basic value that is assigned to a specific quantity. For example, if a farmer sells $10,000 in grain to a country grain elevator and the country elevator sells the same grain to a terminal elevator which, in turn, sells the grain to an exporter, the dollar amount of grain sold through regulated devices is $30,000 even though the quantity remained the same. An error in any of the weighing devices will impact the cost of the product at the next step and will have an ultimate impact on the economy.

Weights and Measures

Weights and Measures Unit Moves to New Quarters

After 73 years in downtown Minneapolis, the Weights and Measures Division has relocated its office and laboratory facilities. The new location, at 2277 Highway 36 in Roseville, is a modern office building with facilities designed and modified specifically for the division. Special balance tables and piers eliminate any effects of outside vibrations which might detrimentally affect the precision analytical balances used in the metrology laboratory.

The new building has special indoor truck loading facilities which improves the heavy test weight handling and storage capabilities of the division. This is an important aid to Minnesota's grain industry, primary users of heavy test weights, because it allows improvements in shipping efficiency and reductions in calibration time and cost.

Facilities for a new petroleum testing laboratory were designed in cooperation with the Roseville Fire Marshall. Laboratory conditions are cleaner and more efficient while the odors and health hazards normally associated with petroleum product testing have been eliminated completely.

Improvements in design and working efficiency resulted in a substantial reduction in the office and laboratory space occupied by the division.

User Fees

The 1984 Minnesota Legislature made an important change in the division's fee system. Effective July 1, 1985, the division will not charge direct inspection fees for gasoline pumps and most petroleum product bulk meters.

The cost of performing these tests will be recovered by the Department of Revenue through the Petroleum Inspection Fee charged under Minnesota Statutes, Section 296.13.

Petroleum Testing Program Modernized

Petroleum quality testing responsibility was transferred to MDPS from the Department of Revenue in 1978. Based on experience in the field of petroleum quality regulation, MDPS has initiated a program to modernize statutory standards and laboratory testing facilities for petroleum products.

Modern gasoline standards, including new requirements for gasoline-alcohol blends, were enacted by the 1984 Minnesota Legislature. Legislative proposals developed by MDPS in cooperation with the petroleum industry reflect standards published by the American Society for Testing and Materials and bring Minnesota's petroleum quality standards into line with modern refining practices and with the standards of other states. This uniformity is important to improvements in availability and price of petroleum products.

The petroleum testing laboratory has been enhanced with new and sophisticated equipment to verify conformance with the new standards. In addition to distillation and flash point testing capabilities, the laboratory now has total sulfur content analysis and alcohol content analysis equipment.

MDPS petroleum quality testing helps assure Minnesota consumers and motorists of high quality, safe fuels for homes, automobiles and industry.

questions?

Questions regarding any services, programs or activities of the Weights & Measures Division of MDPS should be directed to the division offices at 2277 Highway #36, Roseville, Mn., 55113. The telephone number is area code 612 / 341-7200

MDPS

Minnesota Department of Public Service

Public Advocate for the State of
Minnesota in Regulation of Public Utilities

Investigative and Enforcement Agency
for Weights and Measures

Biennial Report

Editor: Bob Carlson